

Claims

1. Method for the treatment of skin diseases with the aid of UV radiation generated by a laser and directed onto the skin areas affected by the disease wherein the thickness of the epidermis in such skin areas is determined and the laser radiation dose regulated depending on the epidermis thickness so detected.

2. Method according to claim 1 wherein the thickness of the epidermis is determined individually for each affected skin area and depending on this thickness the laser radiation dose is individually regulated for each affected skin area.

3. Method according to claim 1 wherein the laser radiation dose applied during treatment is increased in subsequent treatment sessions when a hyperpigmentation occurs within the treated skin area or in the event a visible reaction cannot be noted, and should this not be the case is maintained.

4. Method according to claim 1 wherein the thickness of the epidermis of a skin area affected by the skin disease is newly determined after a treatment by means of UV radiation and, based on this, the laser radiation dose being applied during the next treatment is newly adapted.

5. Method according to claim 1 wherein an ultrasonic device is employed for the determination of the epidermis thickness.

6. Method according to claim 1 wherein an excimer laser is employed as laser device.

7. Method according to claim 6 wherein a XeCl laser is employed as excimer laser.

5 8. Method according to claim 1 wherein a flexible light conductor provided with an end piece for the placement onto the skin areas to be treated is used for the direction of the UV radiation to skin areas affected by the skin disease.

10 9. Method according to claim 8 wherein the end piece of the light conductor is combined into an integral unit formed with an ultrasonic probe connected with an ultrasonic device for the determination of the thickness of the epidermis.

10. Method according to claim 1 wherein a mirror arm is employed for the direction of the UV radiation onto the skin areas affected by the skin disease.

15 11. Method according to claim 1 wherein for the implementation of the method a laser therapy device with a control system is used with said control automatically regulating the laser radiation dose to be applied to skin areas affected by the skin disease as a function of the thickness of the epidermis of these skin areas.

20 12. Method according to claim 1 wherein the method is used for the treatment of psoriasis, vitiligo, neurodermitis, acne, mycosis fungoides, exantematic lichen ruber, granuloma anulare, lichen planus, alopecia areata, or for the repigmentation of scars or hypopigmented skin areas after skin resurfacing.

25 13. Method according to claim 1 wherein at least in some of the skin areas affected by the skin disease the laser radiation dose is determined that causes a visible redness without blister formation to occur and based on this

given laser radiation dose and the thickness of the epidermis detected in this skin area the laser radiation dose for the treatment of this skin area is regulated.

14. Method according to claim 13 wherein the thickness of the epidermis of various skin areas affected by the skin disease is correlated with the thickness of the epidermis of one skin area for which the laser radiation dose causing a visible redness without blister formation has been determined and based on said thickness the laser radiation dose to be applied for treatment is individually established for each individual skin area to be treated.

15. Method according to claim 13 wherein the laser radiation dose applied during treatment is increased in subsequent treatment sessions when a hyperpigmentation occurs within the treated skin area or in the event a visible reaction cannot be noted, and should this not be the case is maintained.

16. Method according to claim 13 wherein the thickness of the epidermis of a skin area affected by the skin disease is newly determined after a treatment by means of UV radiation and, based on this, the laser radiation dose being applied during the next treatment is newly adapted.

17. Method according to claim 13 wherein an ultrasonic device is employed for the determination of the epidermis thickness.

18. Method according to claim 13 wherein an excimer laser is employed as laser device.

19. Method according to claim 18 wherein a XeCl laser is employed as excimer laser.

20. Method according to claim 13 wherein a flexible light conductor provided with an end piece for the placement onto the skin areas to be treated is used for the direction of the UV radiation to skin areas affected by the skin disease.

21. Method according to claim 20 wherein the end piece of the light conductor is combined into an integral unit formed with an ultrasonic probe connected with an ultrasonic device for the determination of the thickness of the epidermis.

5 22. Method according to claim 13 wherein a mirror arm is employed for the direction of the UV radiation onto the skin areas affected by the skin disease.

23. Method according to claim 13 wherein for the implementation of the method a laser therapy device with a control system is used with said control automatically regulating the laser radiation dose to be applied to skin areas
10 affected by the skin disease as a function of the thickness of the epidermis of these skin areas.

24. Method according to claim 13 wherein the method is used for the treatment of psoriasis, vitiligo, neurodermitis, acne, mycosis fungoides, exantematic lichen ruber, granuloma anulare, lichen planus, alopecia areata, or
15 for the repigmentation of scars or hypopigmented skin areas after skin resurfacing.

25. Laser therapy device for the treatment of skin diseases with the aid of UV radiation comprising a laser and a device for the most precise guidance of the laser beam, wherein the laser therapy device is equipped with a control
20 mechanism that automatically regulates the laser radiation dose applied, for curing purposes, to a skin area affected by the skin disease depending on the epidermis thickness found in such skin areas.

26. Laser therapy device according to claim 25 wherein the laser therapy device comprises a device for the determination of the thickness of the
25 epidermis in skin areas affected by the skin disease.

27. Laser therapy device according to claim 26 wherein the device for the determination of the thickness of the epidermis and the laser are integrated into a single housing.

28. Laser therapy device according to claim 26 wherein the device for the determination of the epidermis thickness is an ultrasonic device.

29. Laser therapy device according to claim 25 wherein an excimer laser is employed as laser device.

5 30. Laser therapy device according to claim 29 wherein a XeCl laser is employed as excimer laser.

31. Laser therapy device according to claim 25 wherein the device for the most precise guidance of the laser beam is a flexible light conductor with end piece to be placed onto the skin area to be treated.

10 32. Laser therapy device according to claim 31 wherein an ultrasonic probe connected with an ultrasonic device and the end piece of the light conductor are combined to form an integral unit.

33. Laser therapy device according to claim 25 wherein the device for the most precise guidance of the laser beam is a mirror arm.

15 34. Laser therapy device according to claim 25 wherein the laser radiation dose applied during treatment is increased in subsequent treatment sessions when a hyperpigmentation occurs within the treated skin area or in the event a visible reaction cannot be noted, and should this not be the case is maintained.

20 35. Laser therapy device according to claim 25 wherein the laser therapy device newly determines the thickness of the epidermis of a skin area affected by the skin disease after a treatment by means of UV radiation and, based on this, newly adapts the laser radiation dose being applied during the next treatment.

25 36. Laser therapy device according to claim 25 wherein the laser therapy device determines in individual skin areas affected by the skin disease

the laser radiation dose that causes a visible redness without blister formation to occur, or that this laser radiation dose is determined separately, and that the laser therapy device based on the laser radiation dose so determined and the thickness of the epidermis detected in this skin area regulates the laser radiation dose for the treatment of this skin area.

37. Laser therapy device according to claim 36 wherein the laser therapy device correlates the thickness of the epidermis of various skin areas affected by the skin disease with the thickness of the epidermis of one skin area for which the laser radiation dose causing a visible redness without blister formation has been determined and based on said thickness establishes individually for each individual skin area to be treated the laser radiation dose to be applied for treatment.

38. Laser therapy device according to claim 36 wherein the laser therapy device comprises a device for the determination of the thickness of the epidermis in skin areas affected by the skin disease.

39. Laser therapy device according to claim 38 wherein the device for the determination of the thickness of the epidermis and the laser are integrated into a single housing.

40. Laser therapy device according to claim 38 wherein the device for the determination of the epidermis thickness is an ultrasonic device.

41. Laser therapy device according to claim 36 wherein an excimer laser is employed as laser device.

42. Laser therapy device according to claim 41 wherein a XeCl laser is employed as excimer laser.

43. Laser therapy device according to claim 36 wherein the device for the most precise guidance of the laser beam is a flexible light conductor with end piece to be placed onto the skin area to be treated.

44. Laser therapy device according to claim 43 wherein an ultrasonic probe connected with an ultrasonic device and the end piece of the light conductor are combined to form an integral unit.

5 45. Laser therapy device according to claim 36 wherein the device for the most precise guidance of the laser beam is a mirror arm.

10 46. Laser therapy device according to claim 36 wherein the laser radiation dose applied during treatment is increased in subsequent treatment sessions when a hyperpigmentation occurs within the treated skin area or in the event a visible reaction cannot be noted, and should this not be the case is maintained.

15 47. Laser therapy device according to claim 36 wherein the laser therapy device newly determines the thickness of the epidermis of a skin area affected by the skin disease after a treatment by means of UV radiation and, based on this, newly adapts the laser radiation dose being applied during the next treatment.